

AMENDED CLAIMS
(replace all original claims)

1. A method to obtain a wheat plant with improved yield properties wherein said method consists in the generation of genetic variability and said method comprises the following stages:
 - a. the construction of a wheat plant F1 by means of the crossing of two parents genetically distant and of opposed industrial qualities;
 - b. the permanent application throughout the whole development of the inflorescence of said plant of a high concentration of sunlight with no spectrum filter by means of 6 mirrored surfaces each one of 1.00 meter long by 0.50 meter high; said mirrored surfaces are mounted over supports in a way that the mirrors point out by their center towards a stick positioned in an equidistant form in the middle of the plot with the plants;
 - c. the germination of the resulting seeds and the analysis of the descendants for the search of stable variants of a different chromosomal number.
2. A method to obtain a wheat plant according to claim 1, wherein a stable wheat variant is obtained, said variant presents crown root, high production capacity of fertile shoots, long and wide leaves and in some cases finely serrated, leaves having a central vein, shoot capacity, perennial habit, high level of grain productivity, high protein level and industrial qualities similar to the hard wheat of best quality, that qualify to be designated as a new type of wheat commonly called Megawheat.
3. A method to obtain a wheat plant according to claim 1, wherein the productivity level exceeds by 60% the production of conventional wheat.
4. A method to obtain a wheat plant according to claim 1, wherein seeds with a weight over 55 g, preferably over 70 g are obtained.
5. A method to obtain a wheat plant according to claim 1, wherein the step of the analysis of the descendants consists in the assisted selection of genetic markers and comprises the evaluation of the DNA of the plants; mapping with one or more of the following SSR genetic markers psp3100; gwm095; wmo264; gdm072; barc134; gwm130 and wherein said markers are placed in the positions according to the following detail:

marker	location			Allele size (bp)
	chromosom e	genome	arm	
psp3100	1	B	length	181,67
gwm095	2	A	central	112,45

wmc264	3	A	length	137,38
gdm072	3	D	short	117,59
barc134	6	B	length	191,90
gwm130	7	D	short	114,06

6. A method to obtain a wheat plant according to claim 5 wherein a wheat plant is obtained designated Megawheat.

5 7. A plant or part of a wheat plant, wherein said plant or part of a wheat plant is obtained by a method which consists in the generation of genetic variability and said method comprising the following stages:

10 a. the construction of a wheat plant F1 by means of the crossing of two parents genetically distant and of opposed industrial qualities;

15 b. the permanent application throughout the whole development of the inflorescence of said plant of a high concentration of sunlight with no spectrum filter by means of 6 mirrored surfaces each one of 1.00 meter long by 0.50 meter high; said mirrored surfaces are mounted over supports in a way that the mirrors point out by their center towards a stick positioned in an equidistant form in the middle of the plot with the plants;

c. the germination of the resulting seeds and the analysis of the descendants for the search of stable variants of a different chromosomal number.

20 wherein in the genetic analysis by means of assisted selection of genetic markers, the following SSR genetic markers psp3100; gwm095; wmc264; gdm072; barc134; gwm130 are located in the positions detailed in the following table:

marker	location			Allele size (bp)
	Chromosom e	genome	arm	
psp3100	1	B	length	181,67
gwm095	2	A	central	112,45
wmc264	3	A	length	137,38
gdm072	3	D	short	117,59
barc134	6	B	length	191,90
gwm130	7	D	short	114,06

wherein said plant belongs to the selected species between *Triticum aestivum*, *T. turgidum*, *T. timopheevii*, *T. monococcum*, *T. zhukovskyi* and *T. urartu* and hybrids of the same, preferably *Triticum aestivum*; and

5 wherein said plant or part of a wheat plant has a crown root, high production capacity of fertile shoots, long and wide leaves and in some cases finely serrated, leaves having a central vein, shoot capacity, perennial habit, high level of grain productivity, high protein level and industrial qualities similar to the hard wheat of best quality, that qualify to be designated as a new type of wheat commonly called Megawheat.

10 8. A method to obtain a wheat plant according to claim 1, wherein in the genetic analysis by means of assisted selection of genetic markers, the following SSR genetic markers psp3100; gwm095; wmc264; gdm072; barc134; gwm130 are located in the positions detailed in the following table:

marker	location			Allele size (bp)
	Chromosom e	genome	arm	
psp3100	1	B	length	181,67
gwm095	2	A	central	112,45
wmc264	3	A	length	137,38
gdm072	3	D	short	117,59
barc134	6	B	length	191,90
gwm130	7	D	short	114,06

15 9. A method to obtain a wheat plant according to claim 1, wherein said plant belongs to the selected species between *Triticum aestivum*, *T. turgidum*, *T. timopheevii*, *T. monococcum*, *T. zhukovskyi* and *T. urartu* and hybrids of the same, preferably *Triticum aestivum*.

20 10. A plant or part of a wheat plant according to claim 7, wherein said part of a wheat plant is a seed or part of a seed, a pollen, or a plant ovule all of them obtained from a seed.

25 11. A plant or part of a wheat plant according to claim 7, wherein said part of a wheat plant is a tissue culture of regenerated cells.

30 12. A plant or part of a wheat plant according to claim 14, wherein a protoplast culture of regenerated cells is obtained from said tissue culture.

13. A plant or part of a wheat plant according to claim 7, wherein said plant is a wheat plant F1 obtained by the crossing of said plants with any plant of the tribe Triticeae.

5 14. A plant or part of a wheat plant according to claim 16 wherein said plant is the descendant of said plants F1.

10 15. A plant or part of a wheat plant according to claim 7, wherein said plant is a hybrid plant.

16. A plant or part of a wheat plant according to claim 7, wherein said plant is a plant 15 resistant to anyone of the group composed by pesticides, insects and diseases.

17. A plant or part of a wheat plant according to claim 7, wherein said plant is a plant 20 with a reduced phytate content.

18. A plant or part of a wheat plant according to claim 7, wherein said plant is a plant 25 with a modified fatty acid metabolism.

19. A plant or part of a wheat plant according to claim 7, wherein said plant is a plant 30 with waxy starch or starch with an amylase increase.

20. A method to generate genetic variability in wheat, preferably Triticum aestivum, 35 wherein said method comprises the steps of:

- 25 a. the construction of a wheat plant F1 by means of the crossing of two parents genetically distant and of opposed industrial qualities;
- b. the permanent application through the whole development of the inflorescence of said plant of a high concentration of sunlight without spectrum filtration;
- c. the germination of the resulting seeds and the analysis of the descendants for the search of stable variants of different chromosomal number.

21. A method to obtain a wheat plant according to claim 2, wherein the productivity 40 level exceeds by 60% the production of conventional wheat.

35 22. A method to obtain a wheat plant according to claim 2, wherein seeds with a weight over 55 g, preferably over 70 g are obtained.

23. A method to obtain a wheat plant according to claim 3, wherein seeds with a 45 weight over 55 g, preferably over 70 g are obtained.

24. A method to obtain a wheat plant according to claim 2, wherein in the genetic analysis by means of assisted selection of genetic markers, the following SSR genetic markers psp3100; gwm095; wmo264; gdm072; barc134; gwm130 are located in the positions detailed in the following table:

marker	location			Allele size (bp)
	Chromosom e	genome	arm	
psp3100	1	B	length	181,67
gwm095	2	A	central	112,45
wmc264	3	A	length	137,38
gdm072	3	D	short	117,59
barc134	6	B	length	191,90
gwm130	7	D	short	114,06

25. A method to obtain a wheat plant according to claim 2, wherein said plant belongs to the selected species between *Triticum aestivum*, *T. turgidum*, *T. timopheevii*, *T. monococcum*, *T. zhukovskyi* and *T. urartu* and hybrids of the same, preferably *Triticum aestivum*.

10 26. A method to obtain a wheat plant according to claim 3, wherein said plant belongs to the selected species between *Triticum aestivum*, *T. turgidum*, *T. timopheevii*, *T. monococcum*, *T. zhukovskyi* and *T. urartu* and hybrids of the same, preferably *Triticum aestivum*.

15 27. A method to obtain a wheat plant according to claim 4, wherein said plant belongs to the selected species between *Triticum aestivum*, *T. turgidum*, *T. timopheevii*, *T. monococcum*, *T. zhukovskyi* and *T. urartu* and hybrids of the same, preferably *Triticum aestivum*.

20 28. A method to obtain a wheat plant according to claim 5, wherein said plant belongs to the selected species between *Triticum aestivum*, *T. turgidum*, *T. timopheevii*, *T. monococcum*, *T. zhukovskyi* and *T. urartu* and hybrids of the same, preferably *Triticum aestivum*.

25 29. A method to obtain a wheat plant according to claim 6, wherein said plant belongs to the selected species between *Triticum aestivum*, *T. turgidum*, *T. timopheevii*, *T. monococcum*, *T. zhukovskyi* and *T. urartu* and hybrids of the same, preferably *Triticum aestivum*